

REMARKS

The dependency objection to claim 22 issued in the preceding Office action was resolved. Applicant noticed a similar dependency issue with respect to claim 13, and despite no objection being raised, hereby corrects claim 13 to depend from independent claim 12. Thus, only issues of §§ 102 and 103 remain.

Applicants acknowledge with appreciation the withdrawal of the previous rejection of claims 2 and 13. The non-final status of the above Office action is also acknowledged in light of the fact that the new rejection to claims 2 and 13 were not the result of an amendment by the Applicants.

The original 22 claims remain pending, with the exception of the dependency of claims 13 and 22 being changed. No substantive amendments have been made to any of the claims. The following remarks are being submitted for consideration by the Examiner with optimism that the claims will be allowed.

Claim Rejections

Claims 1, 4, 12, 14 and 15 were rejected under § 102(e) as being anticipated by the Lindner et al. patent (U.S. Pat. No. 6,640,140). Claims 7-8 and 18-19 were rejected under § 103(a) as being obvious in light of Lindner et al. and the Papadopoulos et al. patent (U.S. Pat. No. 6,061,603). Claims 5 and 16 were rejected as obvious in light of Lindner et al. and the Brown et al. patent (U.S. Pat. No. 6,542,925). Claims 6, 9-11, 17 and 20-22 were rejected as obvious in light of Lindner et al., Brown et al. and Papadopoulos et al. Claim 3 was rejected as obvious in light of Lindner et al. and The Hauet Patent (U.S. Pat. No. 6,799,077). Claims 2 and 13 were rejected as being obvious in light of Lindner et al. and the newly cited Ichimura Katsuhiko reference (Japanese Patent Publication JP10-011325).

As presented in the previous paragraph, all of the independent claims 1, 12 and 14 stand rejected under § 102 as being anticipated by Lindner et al. Should the rejections to the independent claims be overcome, they would be allowable, as

would all of claims 2-11, 13 and 15-22 by virtue of their dependency on allowed independent claims. Because of this, and to simplify the outstanding issues, it is thus believed unnecessary to address any of the other cited rejections such that the following remarks will address only the Lindner et al. reference, despite the fact that other distinctions are believed to exist with regard to the other cited references for at least one or more of the claims. In any event, none of the other references cited are believed to render the claimed invention unpatentable.

As the Examiner notes in paragraph 2 of the Office action, Applicants previously remarked **that each of the three independent claims recite a world wide web interface module that can establish communication from a remote client with an I/O module of an industrial control system without intervention of the controller's PLC** (emphasis added by Applicant). Applicant reiterates this point here because it is one primary distinction between the claimed invention and the Lindner et al. patent.

It was also noted at the first paragraph of page 3 that the Applicants also previously distinguished the claimed invention from the Lindner et al. patent by remarking that **the PLC in Lindner et al. is burdened whenever a web server task is performed since the web server and logic function are both carried out by the PLC**, and further at paragraph 2.1 that **Lindner et al. does not disclose remote control of the controller via the web** (emphasis added).

Specific passages were cited by the Examiner countering each of these three statements by the Applicants. The first of Applicants' comments was countered by a passage from the Papadopoulos et al. reference, which simply stands for the proposition of using existing commercial networks (like the Internet) instead of specialized industrial networks to remotely monitor automation control devices like PLCs. This says nothing about remote communication directly with an I/O module without intervention of the PLC, only that the Internet can replace other non-standard communication networks as the pathway for communicating with the PLC.

The second noted comment by the Applicants was countered by noting that Lindner et al. disclose incorporating a web server in a PLC so as not to affect the scan rate of the PLC (citing col. 2, lines 36-40). Not only does this not refute the Applicants' comment, it expressly supports it. This passage and the rest of the Lindner et al. patent (see Fig. 1) make clear that both the scan and web server functions are performed by the PLC. While Lindner et al. have devised a way for the PLC to perform the web server function in the background or in parallel with the scan function, it is still the PLC that performs the functions. It is the technique for controlling the web server function so as not to interfere with the scan function that is disclosed by Lindner et al. Thus, the Lindner et al. patent deals not with separating the communication of control elements from the PLC but with an efficient way for the PLC to perform both functions without impairing the scan function.

The third noted comment by the Applicants regarding Lindner et al. not disclosing remote control of the controller was countered by citations to col. 2, lines 20-25 and col. 4, lines 35-59 of the Lindner et al. patent, which generally state that over the Internet a remote computer can "obtain information" from a PLC including both ladder scan data and instructions on how to display the data. As with the previous comments, the cited passages in no way refute the Applicants' comment that Lindner et al. are not concerned with controlling automation components remotely, for example, by passing "data between the Web accessing communications medium and the I/O module" as recited in claim 1, but instead are merely concerned with monitoring system operation and performance by retrieving data, including ladder scan data. Applicants believe that the Examiner considers the retrieval of ladder scan data by the remote user to mean that Lindner et al. disclose sending control instructions back to the controller. However, this is not the case. As stated in the Field of Use section at col. 1, lines 8-13, the disclosure of Lindner et al. pertains to "communication over a network between a programmable logic controller (PLC) for performing a control function relevant to an industrial control or automated system and a computer used for monitoring data associated with the

control function and for monitoring control system information generally” (emphasis added).

Thus, nothing presented in the Office action refutes the Applicants’ comments. As the Examiner suggests, it is acknowledged that the entire reference is applied against the claims rather than merely the passages cited in the Office action and noted above. However, nothing in the Lindner et al. patent discloses “a processing unit executing a stored program to communicate directly with at least one I/O module and to pass data between the Web accessing communications medium and the I/O module” such that the “communications may be had with the I/O module without intervention of the programmable logic controller”, as recited in claim 1 for example.

As previously mentioned, the Lindner et al. device fails to recognize both of the principle benefits of the claimed invention, namely to (1) allow initial set up and trouble shooting of the controller during periods of inoperability of the PLC and (2) effect rapid access to I/O data without execution time restraints of the PLC. Remote set up and trouble shooting of the PLC is not possible in the Lindner et al. system because the PLC must be used to perform the communication process. And, while the Lindner et al. patent concerns remote access to control data, it’s entire purpose is to ensure that the data acquisition does not interfere with the scanning function, possibly at the cost of slow data transfer rates.

Lindner et al. thus does not teach the elements of the claimed invention, nor its benefits. Accordingly, claims 1, 12 and 14 are believed not to be anticipated by the Lindner et al. patent. All of the dependent claims 2-11, 13 and 15-22 depend from claims 1, 12 and 14, and are believed allowable for the same reasons.

Conclusion

Accordingly, claims 1-22 are believed to in allowable form in light of the above remarks. Reconsideration and allowance of these claims is thus respectfully

requested. If this response does not result in an allowance of the claims, Applicants ask that the Examiner telephone the undersigned to expedite resolution of this case.

Neither the total number of claims nor the number of independent claims was been chanced. Thus, no fees are believed necessary for consideration of this response. Nevertheless, should any additional fees be needed for full consideration of this amendment, please charge any fees believed necessary in connection with this response to Deposit Account 17-0055.

Respectfully submitted,

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